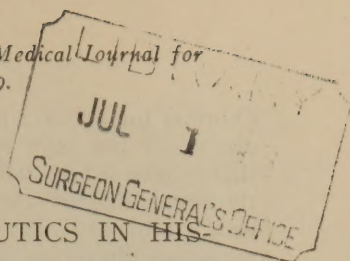


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INFLUENZA THERAPEUTICS IN HISTORICAL* TORY.*

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Influenza, following its usual course, having run its epidemic phase, is now to be with us for several years. It will gradually grow less virulent and become less frequent, but the bacterial strain which caused Spanish influenza will probably maintain its special virulence for some five to ten years at least. The story of the efforts made to treat it in the past will be interesting from an historical point of view, but it is not without practical value, since it illustrates so clearly the ease with which selfdeception occurs and how much possible harm may be done to patients. Slow but sure is beyond all doubt the motto that must characterize the use of new remedies and conservatism, provided it does not degenerate into oldfogyism, is the particular virtue of the doctor.

It was a very wise old physician who said, originally, that the therapeutics of any generation in the history of medicine is always absurd to the second succeeding generation. Sometimes it has happened that the therapeutics of the generation has gone over into the succeeding generation, still in honor and usage, but very rarely has it lasted three generations. There are exceptions, of course. That greatest discovery in the history of therapeutics, the use of mercury in syphilis, has endured some six centuries since its discovery by the Italian surgeons of the thirteenth and fourteenth centuries.

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Quinine for malaria has maintained itself but those are about the only specifics we have left, though there have been many hundreds made and even thousands of cures for disease announced, taken up very enthusiastically, apparently confirmed by conservative observers and yet have afterward disappeared. The most important chapter in the history of medicine is the history of the cures that have failed.

Now that our influenza epidemic is gradually becoming a thing of the past, a review of the available information as to the therapeutics of the disease should be of interest. We have had a pandemic of influenza, that is, an epidemic affecting not only a great many in one country but every people who are brought in contact with it through commerce, in every generation for four or five centuries at least. Probably it has come in nearly every generation since long before Christ. The epidemic described by Hippocrates and Livy some time before 400 B. C. was almost surely influenza. The first attack of it in this country was in 1648 when some 6,000 deaths occurred in the Barbadoes and St. Kitts alone, showing how virulent must have been the disease. It has usually begun in the East, traveling westward like the course of empire, and circling the globe in something more than a year. There are always slight epidemics of it during following years until humanity becomes accustomed to it once more. Some ten years after the Barbadoes and St. Kitts incident, Cromwell in England died in the midst of what was considered to be an influenza epidemic, so that evidently the affection had become endemic for a time in England.

We ought to know something about its therapeutics by this time but I fear that none of us have any confidence in what has been learned. In the last epidemic patients were treated mainly with the then new coal tar drugs and a great many physicians went on record with the declaration that they were sure that these cured their patients, or cer-

tainly did them a great deal of good. Of course, they reduced the fever and lessened the pain which are such marked symptoms at the beginning of influenza, but none of us now think that their use for these purposes is advisable, much less that they are curative. The whole question as to whether fever is not a conservative reaction on the part of the body so as to protect against microbic invasion is still open. Crude reduction of it by drugging is an eminently dangerous experiment. We feel sure now that the coal tar drugs did ever so much more harm than good and that undoubtedly some of the mortality of the disease in the epidemic of the nineties was unfortunately due to this empirical drugging and especially to the use in rather large doses of antipyrine. No one in this epidemic would think for a moment of employing such doses, so that it has taken less than a generation to make that bit of therapeutics absurd.

In the epidemic in the late forties of the nineteenth century, a favorite remedy was whiskey or brandy, or some form of strong, spirituous liquor. It is not surprising, seeing that practically every continued fever and nearly all the febrile conditions were at that time treated confidently with whiskey. It would be amusing, only that it is so amazing, to take up a textbook of medicine written by some distinguished authority about the middle of the nineteenth century, to see how confident he was in the use of whiskey. Typhus fever, rather common then in epidemic form, typhoid fever, much commoner and recurring in frequent epidemics, pneumonia, puerperal fever, unfortunately frequent, septic conditions and pyemia, terribly common, erysipelas and tuberculosis were all treated with whiskey. "When nothing else would do any good, be sure to give whiskey," was the rule, and of course it was used with confidence in influenza. It was about this time that a distinguished American physician, quoting, I think, an equally distinguished English colleague,

said that if he were offered all the drugs of the pharmacopeia on the one hand without whiskey, and whiskey without the drugs, on the other, for the treatment of pneumonia, he would choose the whiskey.

Curiously enough, the one therapeutic hint for influenza in this epidemic that was given with any confidence at the New York Academy of Medicine at the height of our epidemic some months ago was the use of whiskey. In the meantime, the American Medical Association has formally declared that whiskey is not a stimulant but a narcotic and that there are many safer narcotics, and has advised against the use of whiskey in therapeutics. Undoubtedly, however, whiskey has one good effect. This is not physical but mental. A great many patients attacked by influenza, especially if it turns into pneumonia, are very frightened and this makes them incapable of presenting their normal resistive vitality against the disease. For them, whiskey may be good, by lifting the scare. It will have to be given, however, in considerable quantities, so as to produce a certain sense of euphoria if that effect is to be secured, and it is extremely dubious whether the relaxation consequent upon its use to that extent may not prove harmful. It is interesting to have a revival of this kind in the second generation afterward.

Previous epidemics of influenza in the nineteenth century were treated by venesection, calomel and sometimes antimony. The idea was that these removed poisons from the body. It is very probable that harm was thus often done, though possibly a preliminary purgation in strong, healthy individuals often did good. Venesection in patients of the same kind undoubtedly often was of service. A large amount of toxic material was removed with the blood taking; a great call was made on nature's resources. The blood making organs were especially stimulated and from the high bactericidal qualities in such freshly made blood, in

many cases, good was accomplished. Any one who has seen restless, tossing, vigorous pneumonia patients relieved by the taking away of a certain number of ounces of blood, to have the subsequent course of the disease much less disturbing in every way, followed by a normal crisis, is not likely to think that venesection is always harmful. Care in the selection of patients is needed, however. The expression of old Doctor Parry, of Bath, in this regard must not be forgotten. A hundred years ago he said: "It is much more important to know what sort of an individual has the disease than to know what sort of disease the individual has."

The poor influenza patients of the end of the eighteenth and the beginning of the nineteenth century were particularly to be pitied. Venesection, as all those who know the work of Doctor Rush will readily appreciate, was at its height of popularity and its lowest depths in the quantity of blood let. Patients often lost several quarts of blood during the first forty-eight hours of the treatment. This was the rule also for other affections, and poor Mirabeau, a French politician and orator of the Revolution, suffering from angina pectoris, had some eighty ounces of blood taken from him in the course of about thirty-six hours. His own physician took it from the arm nearest the heart, a consultant took it from the other arm, so as to be far from the heart, and a third doctor called, took it from the big toe of his right foot because that was farthest of all from the heart. Our own first President, Washington, suffering from diphtheria, very probably was almost bled to death, though his fatal disease is usually said to have been *cynanche*.

The preceding epidemic of influenza in the eighteenth century, however, had been treated in various ways. Doctor Currie, for instance, emphasized very much the use of cold applied externally, cold water particularly being recommended, but cold air also was employed. Doctor Currie was for some years in this country and was in New York when

there was an influenza epidemic about 1790. Afterward, he went to England and reached distinction over there. Dr. Alfred Magill, in the prize essay (1) to which was awarded the second prize ever given by the Medical Society of the State of New York, summed up some of Currie's experiences in the treatment of fever, in a way which shows that this custom of the end of the eighteenth century long anticipated Brand and his cold water treatment in the nineteenth, but at the same time shows that he realized how much cold air might mean in the treatment of fever, not only typhoid, then called typhus, but in all fevers. The scene described so vividly might very well have been a case of influenza or of pneumonia approaching its crisis, treated by the open air method. Doctor Magill said:

"No one can peruse Doctor Currie's recent experience in this matter without being convinced that cold water when properly applied is a most important remedy in case of fever. Its utility is not confined to typhus; it is equally serviceable in all fevers attended with increase of heat and arterial action. Its effect on the pulse is astonishing in many cases. We have often known the mere bathing of the hands and arms of a febrile patient to reduce the action of the pulse from ten to fifteen beats in the minute, and if this partial application of cold water has such an effect on the action of the heart, how much greater must be the effect of a cold bath. We have many instances on record of its calming at once the most furious delirium; persons in such a situation have often jumped overboard from a vessel into the sea and been taken up perfectly calm and rational and with an almost complete extinguishment of the fever. With many strong instances recorded in various works of its remarkable efficacy in curing fever, it is justly a matter of surprise that physicians so seldom call its great powers into requisition. It exercises a more immediate control over the action of the heart than

bloodletting. Doctor Currie mentions a striking instance of the effects of cool air in reducing the pulse. 'In the month of May, 1801,' he says, 'I was desired to see a patient ill of fever in Sparling street. I found him in the tenth or eleventh day of the fever, delirious and restless; the surface of the body dry, and his heat 104° F. The room was close and I desired the only window in it opened. The wind from the northwest blew directly into this window, and the bed being situated between it and the chimney, a pretty brisk stream of air passed over it. The patient had just thrown off a considerable part of his bedclothes and was exposed naked to the breeze. I sat by him with my finger on his pulse watching the effect. In a little time the pulse fell from 120 to 114 in the minute; he became more tranquil and soon afterward he sank into a quiet sleep, in which he remained when the water for effusion was prepared; of course we did not disturb him; he remained exposed to this cold air until morning when his pulse was found to be about 100 and his heat 101° .'"

In the earlier epidemics of influenza during the eighteenth century, one of the favorite popular remedies at least, though there is no doubt at all that it was used very much by physicians, was the famous tar water of the time. Bishop Berkeley was particularly responsible for a wide diffusion of supposed information with regard to it. As he came to America with the idea of establishing a school of philosophy in Rhode Island near Newport and was with us for some years, his propaganda of the remedy was felt on both sides of the Atlantic. As pointed out by Oliver Wendell Holmes (2) "The bishop, as is usual in such cases, speaks of himself as indispensably obliged, by the duty he owes to mankind, to make his experience public. Now this was by no means evident, nor does it follow in general, that because a man has formed a favorable opinion of a person or thing he has not the proper means of thoroughly understanding, he shall

be bound to print it, and thus give currency to his impressions which may be erroneous and therefore injurious. He would have done much better to have laid his impressions before some experienced physicians and surgeons, such as Doctor Mead and Mr. Cheselden, to have asked them to try his experiment over again, and have been guided by their answers. But the good bishop got excited; he pleased himself with the thought that he had discovered a great panacea; and having once tasted the bewitching cup of self quackery, like many before and since his time, he was so infatuated with the draught that he would insist on pouring it down the throats of his neighbors and all mankind."

The precious fluid was made by stirring a gallon of water with a quart of tar, leaving it forty-eight hours and pouring off the clear water, which was the remedy. As Oliver Wendell Holmes says, "Such was the specific which the great metaphysician recommended for averting and curing all manner of diseases. It was, if he might be believed, a preventive of the smallpox, and of great use in the course of the disease. It was a cure for impurities of the blood, coughs, pleurisy, peripneumony, erysipelas, asthma, indigestion, cachexia, hysterics, dropsy, mortification, scurvy and hypochondria. It was of great use in gout and fevers, and was an excellent preservative of the teeth and gums; answered all the purposes of Elixir Proprietatis, Stoughton's drops, diet drinks, and mineral waters; was particularly to be recommended to seafaring persons, ladies, and men of studious and sedentary lives; could never be taken too long, but, on the contrary, produced advantages which sometimes did not begin to show themselves for two or three months.

"'From my representing tar water as good for so many things,' said Berkeley, 'some perhaps may conclude it is good for nothing. But charity obligeth me to say what I know, and what I think, however it may be taken. Men may censure and

object as they please, but I appeal to time and experiment. Effects misimputed, cases wrong told, circumstances overlooked, perhaps, too, prejudices and partialities against truth, may for a time prevail and keep her at the bottom of her well, from whence nevertheless she emergeth sooner or later, and strikes the eyes of all who do not keep them shut.' ”

The good bishop insisted particularly on its value in all fevers and, in connection with this, comes its use in influenza. The bishop says, “I have had all this confirmed by my own experience in the late sickly season of the year one thousand seven hundred and forty-one, having had twenty-five fevers in my own family cured by this medicinal water, drunk copiously.”

Oliver Wendell Holmes concludes this portion of the essay with this very characteristic paragraph:

“Berkeley died at the age of about seventy; he might have lived longer, but his fatal illness was so sudden that there was not time enough to stir up a quart of the panacea. He was an illustrious man, but he held two very odd opinions: that tar water was everything, and that the whole material universe was nothing.”

It is probable that tar water was less harmful than many of the other remedies so confidently recommended for influenza during the past two centuries. We have come round to recognize that the free use of water internally, especially cool water, is of great value. It is true that at one time, in the eighteenth century, they recommended very cold water, using melted snow for that purpose, and in large quantities, for febrile conditions, and this probably did harm. Unfortunately, in the midst of an epidemic at all times, with a great many ailing and a number of deaths, physicians are prone to feel that there must be something and they grasp at almost anything that is offered and forget that the most important rule for a physician must always be *non nocere*, to be sure to do no harm, and that

is perhaps why Oliver Wendell Holmes ventured to suggest that if all the drugs that mankind had ever used had been thrown into the sea, it would be ever so much better for mankind and ever so much worse for the fishes.

At the beginning of this essay, I quoted the expression "that therapeutics of any generation is always absurd to the second succeeding generation. Each generation, however, has been just as confident of its own therapeutics as the ages roll, as if there were no such rule of medical fallibility. In our generation, we would be very prone to believe that while of course the rule applied to the benighted generations who lived before our time, of course it could not be supposed to apply to our enlightened time. On the possibility of being very much suspected of disloyalty to our time, I might even venture to review what we have done in the therapeutic line in the epidemic now verging toward its close. The Public Health Service warned against the use of new remedies as yet untried and very frankly declared that none of them could be depended upon, though some of them, of course, had good authorities behind them. In default of the new, then, some physicians—indeed, I believe, a great many—I think at the suggestion of some health authorities, though I do not know just who they were, recurred to a very old method of treating influenza, used in the first part of the nineteenth century and earlier, namely the hot mustard foot bath and the mustard poulticing of the chest. I have had practically very little experience with the influenza during the epidemic, but I have seen some chests that are rather thoroughly blistered by mustard applications. I know of some cases where men were given very hot foot baths and then put to bed for a strenuous sweat three days in succession. In one of these cases, I feel sure that the patient did not have influenza at all, but only an ordinary bronchitis with a temperature of 101° or so, for he is and has been for years, subject to such bronchial

colds in the changeable seasons, but the physician very confidently assured his family that his influenza had been aborted and pneumonia probably averted by these measures. I know of at least one tuberculous patient who was probably hurt by this mode of treatment and has a distinct setback in a rather favorable course of the affection, though I think that all that she suffered from was one of these slight exacerbations of her tuberculosis which occur whenever she is a little run down or disturbed for any reason, as she was by the occurrence of the influenza in some members of the family.

I wonder if there is any one who has any right to an opinion in the matter who thinks that applications to the external chest wall can influence in any material way the circulation in the lungs and above all, modify pathological conditions that are deeply seated, sometimes in a single lobe and sometimes only on the mucous membrane of the bronchial tubes? The mustard poultice is applied generously over the whole chest or at least over the anterior portion of both sides, and whatever change is induced in the circulation of the diseased lung must be supposed to occur in the healthy lung also. That organ is engaged bravely and faithfully, as a rule, in making up for the lack of function on the other side. What is the effect of a mustard application on that? I am quite free to confess that I do not know, nor do I even know where to go to look for such information.

As for the hot mustard bath, I am not sure that I understand the rationale of that either. It is, I suppose, presumed to lessen the tendency of congestion in the lungs by bringing a great deal of blood down into the feet. The only trouble about that far reaching conclusion is, that the congestion of the lungs has already taken place as a rule, before the hot foot bath is applied. What effect, then, on the laboring heart, will the presence of two areas of congestion have? I am sorry to say that I can't answer that question either.

My only reason for discussing these negative details is that I fear that even before two generations have passed, some of our therapeutics of this latest epidemic of influenza will seem to be absurd. But then, perhaps, I am a pessimist. I hope not. And perhaps I am only writing so that some historian of medicine of the future generation may possibly be brought to know that some of us at this time had some doubt about the commonly accepted therapeutics and were waiting for the millennial period when our therapy will be scientific and not merely experimental.

REFERENCES.

1. ALFRED MAGILL: History, Causes, and Treatment of Typhus Fever.
2. OLIVER WENDELL HOLMES: Homeopathy and Kindred Delusions, *Medical Essays*, Boston, 1861.